

APPLICATION

FOR

REISSUE

OF

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GRAY-WATER RECYCLING SYSTEM

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to gray-water reclamation systems and more particularly pertains to a new gray-water recycling system for reclaiming gray-water for use in toilets and lawn care.

2. Description of the Prior Art

The use of gray-water reclamation systems is known in the prior art. More specifically, gray-water reclamation systems heretofore devised and utilized are known to consist basically of familiar, expected and obvious structural configurations, notwithstanding the myriad of designs encompassed by the crowded prior art which have been developed for the fulfillment of countless objectives and requirements.

Known prior art includes U.S. Pat. No. 5,106,493; U.S. Pat. No. 5,317,766; U.S. Pat. No. 4,145,279; U.S. Pat. No. 5,406,657; U.S. Pat. No. 4,162,218; and U.S. Pat. No. 3,915,857.

While these devices fulfill their respective, particular objectives and requirements, the aforementioned patents do not disclose a new gray-water recycling system. The inventive device includes a reservoir, which is adapted to treat gray-water. The reservoir has an intake pipe, an outlet pipe and an overflow pipe. An inlet supplies gray-water to the reservoir. The inlet is fluidly coupled to the intake pipe. A filtering means filters the gray-water. The filtering means is fluidly coupled to the outlet pipe. The gray-water is filtered through the filter such that the filtered water is defined as processed gray-water. A pumping means draws the gray-water through the filtering means. The pumping means is fluidly coupled to the filtering means by a pipe. A first valve controls flow of the processed gray-water from the pumping means. The first valve has a first end, a second end and middle section. The first end is fluidly coupled to the pumping means by a pipe. The second end is fluidly coupled to a fresh water inlet. A middle section of the first valve is fluidly coupled to a processed gray-water outlet. The first valve is adapted to open the fresh water if the water pressure from the processed gray-water falls.

In these respects, the gray-water recycling system according to the present invention substantially departs from the conventional concepts and designs of the prior art, and in so doing provides an apparatus primarily developed for the purpose of reclaiming gray-water for use in toilets and lawn care.

SUMMARY OF THE INVENTION

In view of the foregoing disadvantages inherent in the known types of gray-water reclamation systems now present in the prior art, the present invention provides a new gray-water recycling system construction wherein the same can be utilized for reclaiming gray-water for use in toilets and lawn care.

The general purpose of the present invention, which will be described subsequently in greater detail, is to provide a new gray-water recycling system apparatus and method which has many of the advantages of the gray-water reclamation systems mentioned heretofore and many novel features that result in a new gray-water recycling system which is not anticipated, rendered obvious, suggested, or even implied by any of the prior art gray-water reclamation systems, either alone or in any combination thereof.

To attain this, the present invention generally comprises a reservoir, which is adapted to treat gray-water. The reservoir has an intake pipe, an outlet pipe and an overflow pipe. An inlet supplies gray-water to the reservoir. The inlet is fluidly coupled to the intake pipe. A filtering means filters the gray-water. The filtering means is fluidly coupled to the outlet pipe. The gray-water is filtered through the filter such that the filtered water is defined as processed gray-water. A pumping means draws the gray-water through the filtering means. The pumping means is fluidly coupled to the filtering means by a pipe. A first valve controls flow of the processed gray-water from the pumping means. The first valve has a first end, a second end and middle section. The first end is fluidly coupled to the pumping means by a pipe. The second end is fluidly coupled to a fresh water inlet. A middle section of the first valve is fluidly coupled to a processed gray-water outlet. The first valve is adapted to open the fresh water if the water pressure from the processed gray-water falls.

There has thus been outlined, rather broadly, the more important features of the invention in order that the detailed description thereof that follows may be better understood, and in order that the present contribution to the art may be better appreciated. There are additional features of the invention that will be described hereinafter and which will form the subject matter of the claims appended hereto.

In this respect, before explaining at least one embodiment of the invention in detail, it is to be understood that the invention is not limited in its application to the details of construction and to the arrangements of the components set forth in the following description or illustrated in the drawings. The invention is capable of other embodiments and of being practiced and carried out in various ways. Also, it is to be understood that the phraseology and terminology employed herein are for the purpose of description and should not be regarded as limiting.

As such, those skilled in the art will appreciate that the conception, upon which this disclosure is based, may readily be utilized as a basis for the designing of other structures, methods and systems for carrying out the several purposes of the present inventions. It is important, therefore, that the claims be regarded as including such equivalent constructions insofar as they do not depart from the spirit and scope of the present invention.

Further, the purpose of the foregoing abstract is to enable the U.S. Patent and Trademark Office and the public generally, and especially the scientists, engineers and practitioners in the art who are not familiar with patent or legal terms or phraseology, to determine quickly from a cursory inspection the nature and essence of the technical disclosure of the application. The abstract is neither intended to define the invention of the application, which is measured by the claims, nor is it intended to be limiting as to the scope of the invention in any way.

It is therefore an object of the present invention to provide a new gray-water recycling system apparatus and method which has many of the advantages of the gray-water reclamation systems mentioned heretofore and many novel features that result in a new gray-water recycling system which is not anticipated, rendered obvious, suggested, or even implied by any of the prior art gray-water reclamation systems, either alone or in any combination thereof.

It is another object of the present invention to provide a new gray-water recycling system which may be easily and efficiently manufactured and marketed.

It is a further object of the present invention to provide a new gray-water recycling system which is of a durable and reliable construction.

An even further object of the present invention is to provide a new gray-water recycling system which is susceptible of a low cost of manufacture with regard to both materials and labor, and which accordingly is then susceptible of low prices of sale to the consuming public, thereby making such gray-water recycling system economically available to the buying public.

Still yet another object of the present invention is to provide a new gray-water recycling system which provides in the apparatuses and methods of the prior art some of the advantages thereof, while simultaneously overcoming some of the disadvantages normally associated therewith.

Still another object of the present invention is to provide a new gray-water recycling system for reclaiming gray-water for use in toilets and lawn care.

Yet another object of the present invention is to provide a new gray-water recycling system which includes a reservoir, which is adapted to treat gray-water. The reservoir has an intake pipe, an outlet pipe and an overflow pipe. An inlet supplies gray-water to the reservoir. The inlet is fluidly coupled to the intake pipe. A filtering means filters the gray-water. The filtering means is fluidly coupled to the outlet pipe. The gray-water is filtered through the filter such that the filtered water is defined as processed gray-water. A pumping means draws the gray-water through the filtering means. The pumping means is fluidly coupled to the filtering means by a pipe. A first valve controls flow of the processed gray-water from the pumping means. The first valve has a first end, a second end and middle section. The first end is fluidly coupled to the pumping means by a pipe. The second end is fluidly coupled to a fresh water inlet. A middle section of the first valve is fluidly coupled to a processed gray-water outlet. The first valve is adapted to open the fresh water if the water pressure from the processed gray-water falls.

Still yet another object of the present invention is to provide a new gray-water recycling system that allows for use of gray-water for watering lawns.

Even still another object of the present invention is to provide a new gray-water recycling system that contains a pressure stabilization means to insure that the pressure from the system remains relatively constant.

These together with other objects of the invention, along with the various features of novelty which characterize the invention, are pointed out with particularity in the claims annexed to and forming a part of this disclosure. For a better understanding of the invention, its operating advantages and the specific objects attained by its uses, reference should be made to the accompanying drawings and descriptive matter in which there are illustrated preferred embodiments of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will be better understood and objects other than those set forth above will become apparent when consideration is given to the following detailed description thereof. Such description makes reference to the annexed drawings wherein:

FIG. 1 is a schematic plan view of a new gray-water recycling system according to the present invention.

FIG. 2 is a schematic cross-sectional view the first valve of the present invention.

FIG. 3 is a schematic cross-sectional view of the pressure valve of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

With reference now to the drawings, and in particular to FIGS. 1 through 3 thereof, a new gray-water recycling

system embodying the principles and concepts of the present invention and generally designated by the reference numeral 10 will be described.

As best illustrated in FIGS. 1 through 3, the gray-water recycling system 10 generally comprises a reservoir 12. The reservoir 12 is adapted to treat gray-water using conventional treatment means. The reservoir has a top side 13 and a bottom side 14. The reservoir 12 has an intake pipe 15, an outlet pipe 16 and an overflow pipe 17. The outlet pipe 16 is positioned generally adjacent to the bottom side 14 of the reservoir 12. The overflow pipe 17 is positioned generally adjacent to the top side 13 of the reservoir. The overflow pipe 17 is connected to a main outlet for the dwelling in which the system 10 is located.

An inlet 18 for supplying gray-water to the reservoir is fluidly coupled to the intake pipe 15.

A conventional filtering means 20 is a filter for filtering the gray-water is fluidly coupled to the outlet pipe 16. The gray-water is filtered through the filter such that the filtered water is defined as processed gray-water to differentiate it from the pre-processed gray water which enters the filter.

A pumping means 22 draws the gray-water through the filtering means 20. The pumping means 22 is fluidly coupled to the filtering means 20 by a pipe. The pumping means 22 causes the gray-water to be drawn out of the reservoir 12 and through the filter.

A first valve 24 controls flow of the processed gray-water from the pumping means 22 and replaces it with fresh water if the supply of processed gray-water is less than is required. The first valve 24 has a first end 26, a second end 27 and middle section 28. The first valve 24 has a first 29 and second 30 plug therein which are both slidably mounted within the first valve 24. The first plug 29 is positioned between the first end 26 and the middle section 28. The second plug 30 is positioned between the second end 27 and the middle section 28. The first end 26 is fluidly coupled to the pumping means 22 by a pipe. The second end 27 is fluidly coupled to a fresh water inlet 32. The middle section 28 of the first valve 24 is fluidly coupled to a processed gray-water outlet 40. Fluid entering the first 26 and second 27 ends of the first valve 24 exits through the processed gray-water outlet 40. The first valve 24 has a water pressure sensing means 33 therein for detecting a loss of water pressure. The water pressure sensing means 33 is generally adjacent to the first end 26 of the valve 24. The first valve 24 has an actuating means 34 thereon for moving the second plug 30 between an open and a closed position. The actuating means 34 is preferably a conventional solenoid type switch. The solenoid is operationally coupled to the water pressure sensing means 33. If the pressure of the processed gray-water falls the solenoid will open the second plug 30 such that water from the fresh water inlet 32 may enter the processed gray-water outlet 40. The first plug 29 prevents water from the fresh water supply from traveling out of the first end 26 of the first valve 24. The processed gray-water outlet has a first one-way valve 41 therein for allowing flow of water in a first direction away from the first valve 24. The processed gray-water outlet 40 may supply water to such things as a toilet or a lawn watering system.

A pressure stabilizing means 50 for stabilizing the pressure of the processed gray-water leaving the processed gray-water outlet 40 and may be manually used to send fresh water into the processed gray-water outlet 40.

The pressure stabilizing means 50 contains a pressure valve 52. The pressure valve 52 is elongate and has a first end 53 and a second end 54. The pressure valve 52 has a first